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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/883,963	06/20/2001	Eric Menard	1200.495	4435

7590

04/16/2004

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EXAMINER

SHIMIZU, MATSUICHIRO

ART UNIT

PAPER NUMBER

2635

DATE MAILED: 04/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/883,963

Applicant(s)

MENARD ET AL.

Examiner

Matsuichiro Shimizu

Art Unit

2635

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

The examiner acknowledges canceled claims 1-11 and new claims 12-24.

The examiner withdraws the objection to the abstract in view of new abstract provided by the applicant filed on 2/10/2004.

Response to Arguments

Applicant's arguments with respect to claims 12-24 have been considered but are moot in view of the new grounds of rejection.

yamamoto instead of michael.

Therefore, rejection of claims 12-24 follows:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 12–24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lambropoulos (5,736,935) in view of Yamamoto (5,479,442).

Regarding claim 12, Lambropoulos teaches a system for controlling locking/unlocking means of at least one openable panel of a vehicle, comprising: vehicle transmission/reception means carried by the vehicle, comprising vehicle memory means comprising a vehicle register in which is stored random code (col. 4, lines 29–50, random number associated with security code 100 and 102); vehicle transmission means for transmitting an interrogation signal (col. 4, lines 63–65, interrogator C); and vehicle decode means for decoding a response signal received and for verifying whether the received signal carries a signature of a user transmission means (col. 7, lines 10–12, security code associated with random number (col. 4, lines 46–50)); and user transmission/reception means intended to be carried by a user for transmitting the response signal for controlling unlocking actuation of the operable panel (col. 7, lines 30–35, door unlocked), comprising user memory means comprising a user register in which is stored the random code (col. 4, lines 41–50, security code associated with random number (col. 4, lines 46–50)); user decoding means for decoding the transmission signal received (col. 6, lines 14–21, recovering baseband data); and the user transmission means for transmitting the response signal which carries the random code and the signature which is specific to the user transmission/reception means (col. 7, lines 6–19, random code associated with security code 100 and function code associated with signature 108). But Lambropoulos does not teach vehicle memory means comprising a vehicle circular shift register in which is stored a pseudo-random code; vehicle transmission means for transmitting an interrogation signal which carries the pseudo-random code; and

vehicle de-spreading means for de-spreading a response signal received unless a pseudo-random code carried by the response signal is not synchronized in substantial correlation with a corresponding pseudo-random code stored in the vehicle memory means by a shift less than required for an intermediate transmission means to intercept and retransmit a response signal; and user memory means comprising a user circular shift register in which is stored the pseudo-random code; user de-spreading means for de-spreading the transmission signal received unless the pseudo-random code carried by the interrogation signal is not synchronized in substantial correlation with the corresponding pseudo-random code stored in the user memory means by a shift less than required for an intermediate transmission means to intercept and retransmit the interrogation signal; and the user transmission means for transmitting the response signal which carries the pseudo-random code and the signature which is specific to the user transmission/reception means.

However, Yamamoto teaches, in the art of communication system, memory means (col. 1, lines 6-13, vehicle) comprising a vehicle circular shift register (Fig. 5, col. 4, lines 13-17, circular shift associated with feeding back to position "1") in which is stored a pseudo-random code (Fig. 2, generated and stored PNG 24); vehicle transmission means (fig. 2, amplify 27 and transmit via antenna 28) for transmitting a signal which carries the pseudo-random code; and vehicle de-spreading means (Fig. 1, de-spreading means 16) for de-spreading a response signal received unless a pseudo-random code carried by the response signal is not synchronized in substantial correlation with a corresponding pseudo-random code stored in the vehicle memory means (Fig. 1, correlation unit 161); and user memory means comprising a user circular shift register in which is stored the pseudo-random code; user de-spreading

Art Unit: 2635

means for de-spreading the transmission signal received unless the pseudo-random code carried by the interrogation signal is not synchronized in substantial correlation with the corresponding pseudo-random code stored in the user memory (Fig. 1, correlation unit 161 associated with degree of matching between sent PN and stored

PN); and the user transmission means for transmitting the response signal which carries the pseudo-random code (Fig. 2, PN 24) for the purpose of reducing noise effect and of preventing the intercept and retransmit to unlock the door, that is, retransmitted signal can not generate high enough correlation to provide "yes" vote to unlock the door. Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to include memory means comprising a vehicle circular shift register in which is stored a pseudo-random code; vehicle transmission means for transmitting a signal which carries the pseudo-random code; and vehicle de-spreading means for de-spreading a response signal received unless a pseudo-random code carried by the response signal is not synchronized in substantial correlation with a corresponding pseudo-random code stored in the vehicle memory means; and user memory means comprising a user circular shift register in which is stored the pseudo-random code; user de-spreading means for de-spreading the transmission signal received unless the pseudo-random code carried by the interrogation signal is not synchronized in substantial correlation with the corresponding pseudo-random code stored in the user memory; and the user transmission means for transmitting the response signal which carries the pseudo-random code in the device of Lambropoulos because Lambropoulos suggests vehicle memory means comprising a vehicle register in which is stored random code; vehicle transmission means for transmitting an interrogation signal; and vehicle

Art Unit: 2635

decode means for decoding a response signal received and for verifying whether the received signal carries a signature of a user transmission means; and user transmission/reception means intended to be carried by a user for transmitting the response signal for controlling unlocking actuation of the operable panel, comprising user memory means comprising a user register in which is stored the random code; user decoding means for decoding the transmission signal received; and the user transmission means for transmitting the response signal which carries the random code and the signature which is specific to the user transmission/reception means and Yamamoto teaches memory means comprising a vehicle circular shift register in which is stored a pseudo-random code; vehicle transmission means for transmitting a signal which carries the pseudo-random code; and vehicle de-spreading means for de-spreading a response signal received unless a pseudo-random code carried by the response signal is not synchronized in substantial correlation with a corresponding pseudo-random code stored in the vehicle memory means; and user memory means comprising a user circular shift register in which is stored the pseudo-random code; user de-spreading means for de-spreading the transmission signal received unless the pseudo-random code carried by the interrogation signal is not synchronized in substantial correlation with the corresponding pseudo-random code stored in the user memory; and the user transmission means for transmitting the response signal which carries the pseudo-random code for the purpose of reducing noise effect and of preventing the intercept and retransmit to unlock the door, that is, retransmitted signal can not generate high enough correlation to provide "yes" vote to unlock the door.

Art Unit: 2635

Likewise, Yamamoto teaches, in the art of communication system, correlation (Fig. 1, correlation unit 161 in de-spreader) for the purpose of reducing unauthorized vehicle entry. Furthermore, one of ordinary skill in the art recognizes correlation ~~calculated over the signal data acquisition period and shift provide same duration~~ period, and shift is less than duration required for an intermediate transmission means to intercept and retransmit a response signal is a design requirement. How-else the door be unlocked when intercept and retransmission is less than acquisition period? Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to include a shift less than required for an intermediate transmission means to intercept and retransmit the interrogation signal in the device of Lambropoulos because one ordinary skill recognizes a shift less than required for an intermediate transmission means to intercept and retransmit the interrogation signal for the purpose of reducing unauthorized vehicle entry.

Regarding claim 13, Lambropoulos teaches a system according to claim 12, wherein: the interrogation signal transmitted by the vehicle transmission/reception means comprises a key code (Fig. 2, interrogation code 104); and the response signal transmitted by the user transmission/reception means comprises a secret code (Fig. 1, security code 50) determined by the user transmission/reception means as a function of the key code (Fig. 1, received key code matches with stored key code 52).

Regarding claim 14, Lambropoulos in view of Yamamoto teaches a system according to claim 13, wherein the vehicle transmission/reception means further comprise a mixing means for mixing the key code (Lambropoulos-Fig. 2, interrogation code 104) with the pseudo-random code (Yamamoto-Fig. 2, mixing of PNG code 24))

carried by the interrogation signal (Lambropoulos-Fig. 2, interrogation code 104 or signal).

Regarding claim 15, Lambropoulos in view of Yamamoto teaches a system according to claim 13, wherein the vehicle transmission/reception means further comprise a mixing means for mixing the key code (Lambropoulos-Fig. 2, interrogation code 104) with the pseudo-random code (Yamamoto-Fig. 2, mixing of PNG code 24)) carried by the response signal (Lambropoulos-col. 7, lines 6-19, random code associated with security code 100 and function code associated with signature 108).

Regarding claim 16, Lambropoulos in view of Yamamoto teaches a system according to claim 13, wherein the key code (Lambropoulos-Fig. 2, interrogation code 104) comprise the pseudo-random code (Yamamoto-Fig. 2, mixing of PNG code 24)) of the interrogation signal.

Regarding claim 17, Yamamoto teaches a system according to claim 12, wherein the signature consists of the pseudo-random code (Yamamoto-Fig. 2, mixing of PNG code 24) of the response signal.

Regarding claim 18, Yamamoto teaches a system according to claim 12, wherein the system comprises means for synchronizing (Fig. 3, SYNC) the vehicle memory means and the user memory means prior to transmission of the interrogation signal.

Regarding claim 19, Yamamoto teaches a system according to claim 18, wherein: the pseudo-random code comprises a post-synchronization pseudo-random code (Figs. 3-4, spread out ID0-3 code); the user transmission/reception means transmits a pre-synchronization pseudo random code (Fig. 3, col. 5, lines 33-39, PN code associated with series of "1" bits; a SYNC) upon activation of the user

transmission/reception means; and the vehicle transmission/reception means comprise means for self-synchronizing (Fig. 3, col. 5, lines 33-39, self-synch. associated with series of "1" bits; a SYNC) with the pre-synchronization ~~pseudo-random code (Fig. 4b, PN code 231) transmitted by the user~~ transmission/reception means.

Regarding claim 20, Yamamoto teaches a system according to claim 19, wherein the pre-synchronization pseudo-random code (Figs. 3-4, spread out SYNC code) is shorter than the post-synchronization pseudo-random code (Figs. 3-4, spread out ID0-3 code).

Regarding claim 21, Yamamoto teaches a system according to claim 20, wherein the post-synchronization pseudo-random code comprises 24-bit codes (Fig. 3, ID0-D3). But Lambropoulos in view of Yamamoto does not teach 127-bit codes.

However, Yamamoto discloses, in the art of vehicle security, post-synchronization pseudo-random code comprises 24-bit codes (Fig. 3, ID0-D3). Therefore, it would have been obvious to a person skilled in the art at the time of invention was made to include psuedo-random code is 127 bit code as a matter of choice in design because Yamamoto suggests 24 bit code and one skilled in the art recognizes 127 bit code is a matter of choice in design through routine experimentation in order to achieve optimum two-way communication.

Regarding claim 22, Yamamoto teaches a system according to claim 12, wherein the interrogation signals and response signals comprise RF signals modulated by a two-phase NRZ modulation (Fig. 4c, signal 251).

Regarding claim 23, Lambropoulos teaches a system according to claim 12, wherein the vehicle is an automobile (col. 2, lines 26-46, vehicle associated with seat control, Keyless entry system, unlocking door).

Regarding claim 24, Yamamoto teaches a system according to claim 12, wherein the shift comprises less than one half of a bit period with respect to the code of the user circular shift register (Fig. 4 a and b, PN bit period in 231 is far less than bit period in D0).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matsuichiro Shimizu whose telephone number is (703) 306-5841. The examiner can normally be reached on Monday through Friday from 8:00 AM to 4:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik, can be reached on (703-305-4704). The fax phone number for the organization where this application or proceeding is assigned is (703-305-3988).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703-305-8576).

Matsuichiro Shimizu

April 10, 2004

MICHAEL HORABIK
SUPERVISORY PATENT EXAMINER
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